AMENDMENTS

Please enter the following amendments without prejudice or disclaimer.

In the Claims:

Please cancel claims 4-6, 9 and 10 without prejudice or disclaimer.

Please rewrite claim 2 to read as follows:

2. (Amended) A population of conjugate molecules, said conjugate molecules comprising an antigen and a polynucleotide comprising an immunostimulatory sequence (ISS), wherein the antigen is an allergen, and wherein the extent of conjugation in the population provides a 40% histamine release ratio of greater than about 500, said ratio calculated as the ratio of (i) concentration of ISS-antigen conjugate required for about 40% histamine release from basophils from an antigen-sensitized individual to (ii) concentration of antigen required for about 40% histamine release from basophils from an antigen-sensitized individual.

Please add new claims 43-107 as follows:

43. (New) The population of claim 1, wherein said immunostimulatory sequence comprises the sequence 5'-cytosine, guanine-3'.

44. (New) The population of claim 43, wherein said immunostimulatory sequence comprises the sequence 5'-T, C, G-3'.

45. (New) The population of claim 43, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine-3'.

46. (New) The population of claim 45, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of GACGCT, GACGTC, GACGTT, GACGCC, GACGCU, GACGUC, GACGUU, GACGUT, GACGTU, AGCGTT, AGCGCT, AGCGTC, AGCGCC, AGCGUU, AGCGCU, AGCGUC, AGCGUT, AGCGTU, AACGTC, AACGCC, AACGTT, AACGCT, AACGUC, AACGUU, AACGCU, AACGUT, AACGTU, GGCGTT, GGCGCT, GGCGTC, GGCGCC, GGCGUU, GGCGCU, GGCGUC, GGCGUT, and GGCGTU.

47. (New) The population of claim 45, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, C-3'.

48. (New) The population of claim 47, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of GACGCTCC, GACGTCCC, GACGTTCC, GACGCCCC, AGCGTTCC, AGCGCTCC, AGCGTCCC, AGCGCCCC, AACGTCCC, AACGCCCC, AACGTTCC, AACGCTCC, GGCGTTCC, GGCGCTCC, GGCGTCCC, and GGCGCCCC.

49. (New) The population of claim 48, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of
5'-TCATCTCGAACGTTCCACAGTCA-3' (SEQ ID NO:3),
5'-TGACTGTGAACGTTCCAGATGA-3' (SEQ ID NO:4),
5'-TGACTGTGAABGTTCCAGATGA-3' (SEQ ID NO:6) where B is 5-bromocytosine.

50. (New) The population of claim 45, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

51. (New) The population of claim 50, wherein said immunostimulatory sequence is comprises a sequence selected from the group consisting of GACGCTCG, GACGTCCG, GACGCCCG, GACGTTCG, AGCGCTCG, AGCGTTCG, AGCGTCCG, AGCGCCCG, AACGTCCG, AACGCCCG, AACGTTCG, AACGCTCG, GGCGTTCG, GGCGCTCG, GGCGTCCG, and GGCGCCCG.

52. (New) The population of claim 51, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of
5'-TGACTGTGAACGTTCGAGATGA-3' (SEQ ID NO:1),
5'-TGACCGTGAACGTTCGAGATGA-3' (SEQ ID NO:2),
5'-TCCATAACGTTCGCCTAACGTTCGTC-3' (SEQ ID NO:5)
5'-TGACTGTGAABGTTCGAGATGA-3' (SEQ ID NO:7) where B is 5-bromocytosine, and
5'-TGACTGTGAABGTTBGAGATGA-3' (SEQ ID NO:8) where B is 5-bromocytosine.

53. (New) The population of claim 2, wherein said immunostimulatory sequence comprises the sequence 5'-cytosine, guanine-3'.

54. (New) The population of claim 53, wherein said immunostimulatory sequence comprises the sequence 5'-T, C, G-3'.

55. (New) The population of claim 53, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine-3'.

56. (New) The population of claim 55, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of GACGCT, GACGTC, GACGTT, GACGCC, GACGCU, GACGUC, GACGUU, GACGUT, GACGTU, AGCGTT, AGCGCT, AGCGTC, AGCGCC, AGCGUU, AGCGCU, AGCGUC, AGCGUT, AGCGTU, AACGTC, AACGCC, AACGTT, AACGCT, AACGUC, AACGUU, AACGCU, AACGUT, AACGTU, GGCGTT, GGCGCT, GGCGTC, GGCGCC, GGCGUU, GGCGCU, GGCGUC, GGCGUT, and GGCGTU.

57. (New) The population of claim 55, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, C-3'.

58. (New) The population of claim 57, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of GACGCTCC, GACGTCCC, GACGTTCC, GACGCCCC, AGCGTTCC, AGCGCTCC, AGCGTCCC, AGCGCCCC, AACGTCCC, AACGCCCC, AACGTTCC, AACGCTCC, GGCGTTCC, GGCGCTCC, GGCGTCCC, and GGCGCCCC.

59. (New) The population of claim 58, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of
5'-TCATCTCGAACGTTCCACAGTCA-3' (SEQ ID NO:3),
5'-TGACTGTGAACGTTCCAGATGA-3' (SEQ ID NO:4), and
5'-TGACTGTGAABGTTCCAGATGA-3' (SEQ ID NO:6) where B is 5-bromocytosine.

60. (New) The population of claim 56, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

61. (New) The population of claim 60, wherein said immunostimulatory sequence is comprises a sequence selected from the group consisting of GACGCTCG, GACGTCCG, GACGCCCG, GACGTTCG, AGCGCTCG, AGCGTTCG, AGCGTCCG, AGCGCCCG, AACGTCCG, AACGCCCG, AACGTTCG, AACGCTCG, GGCGTTCG, GGCGCTCG, GGCGTCCG, and GGCGCCCG.

62. (New) The population of claim 61, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of
5'-TGACTGTGAACGTTCGAGATGA-3' (SEQ ID NO:1),
5'-TGACCGTGAACGTTCGAGATGA-3' (SEQ ID NO:2),
5'-TCCATAACGTTCGCCTAACGTTCGTC-3' (SEQ ID NO:5),
5'-TGACTGTGAABGTTCGAGATGA-3' (SEQ ID NO:7) where B is 5-bromocytosine, and
5'-TGACTGTGAABGTTBGAGATGA-3' (SEQ ID NO:8) where B is 5-bromocytosine.

63. (New) A population of conjugate molecules, said conjugate molecules comprising an antigen and a polynucleotide comprising an immunostimulatory sequence (ISS), wherein the extent of conjugation in the population provides an average of at least 5.5 ISS-containing polynucleotides per antigen molecule.

64. (New) The population of claim 63, wherein said immunostimulatory sequence comprises the sequence 5'-cytosine, guanine-3'.

65. (New) The population of claim 63, wherein said immunostimulatory sequence comprises the sequence 5'-T, C, G-3'.

66. (New) The population of claim 63, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine-3'.

67. (New) The population of claim 66, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of GACGCT, GACGTC, GACGTT, GACGCC, GACGCU, GACGUC, GACGUU, GACGUT, GACGTU, AGCGTT, AGCGCT, AGCGTC, AGCGCC, AGCGUU, AGCGCU, AGCGUC, AGCGUT, AGCGTU, AACGTC, AACGCC, AACGTT, AACGCT, AACGUC, AACGUU, AACGCU, AACGUT, AACGTU,

GGCGTT, GGCGCT, GGCGTC, GGCGCC, GGCGUU, GGCGCU, GGCGUC, GGCGUT, and GGCGTU.

68. (New) The population of claim 66, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, C-3'.

69. (New) The population of claim 68, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of GACGCTCC, GACGTCCC, GACGTTCC, GACGCCCC, AGCGTTCC, AGCGCTCC, AGCGTCCC, AGCGCCCC, AACGTCCC, AACGCCCC, AACGTTCC, AACGCTCC, GGCGTTCC, GGCGCTCC, GGCGTCCC, and GGCGCCCC.

70. (New) The population of claim 69, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of
5'-TCATCTCGAACGTTCCACAGTCA-3' (SEQ ID NO:3),
5'-TGACTGTGAACGTTCCAGATGA-3' (SEQ ID NO:4),
5'-TGACTGTGAABGTTCCAGATGA-3' (SEQ ID NO:6) where B is 5-bromocytosine.

71. (New) The population of claim 66, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

72. (New) The population of claim 71, wherein said immunostimulatory sequence is comprises a sequence selected from the group consisting of GACGCTCG, GACGTCCG, GACGCCCG, GACGTTCG, AGCGCTCG, AGCGTTCG, AGCGTCCG, AGCGCCCG, AACGTCCG, AACGCCCG, AACGTTCG, AACGCTCG, GGCGTTCG, GGCGCTCG, GGCGTCCG, and GGCGCCCG.

73. (New) The population of claim 72, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of
5'-TGACTGTGAACGTTCGAGATGA-3' (SEQ ID NO:1),
5'-TGACCGTGAACGTTCGAGATGA-3' (SEQ ID NO:2),
5'-TCCATAACGTTCGCCTAACGTTCGTC-3' (SEQ ID NO:5)

5'-TGACTGTGAABGTTCGAGATGA-3' (SEQ ID NO:7) where B is 5-bromocytosine, and 5'-TGACTGTGAABGTTBGAGATGA-3' (SEQ ID NO:8) where B is 5-bromocytosine.

74. (New) A composition comprising the population of claim 63 in a pharmaceutically acceptable excipient.

75. (New) A population of conjugate molecules, said conjugate molecules comprising an antigen and a polynucleotide comprising an immunostimulatory sequence (ISS), wherein the extent of conjugation in the population provides an average ratio of (i) average mass of ISS-containing polynucleotide to (ii) average mass of antigen of at least 1.1.

76. (New) The population of claim 75, wherein said immunostimulatory sequence comprises the sequence 5'-cytosine, guanine-3'.

77. (New) The population of claim 75, wherein said immunostimulatory sequence comprises the sequence 5'-T, C, G-3'.

78. (New) The population of claim 75, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine-3'.

79. (New) The population of claim 78, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of GACGCT, GACGTC, GACGTT, GACGCC, GACGCU, GACGUC, GACGUU, GACGUT, GACGTU, AGCGTT, AGCGCT, AGCGTC, AGCGCC, AGCGUU, AGCGCU, AGCGUC, AGCGUT, AGCGTU, AACGTC, AACGCC, AACGTT, AACGCT, AACGUC, AACGUU, AACGCU, AACGUT, AACGTU, GGCGTT, GGCGCT, GGCGTC, GGCGCC, GGCGUU, GGCGCU, GGCGUC, GGCGUT, and GGCGTU.

80. (New) The population of claim 78, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, C-3'.

81. (New) The population of claim 80, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of GACGCTCC, GACGTCCC, GACGTTCC, GACGCCCC, AGCGTTCC, AGCGCTCC, AGCGTCCC, AGCGCCCC,

AACGTCCC, AACGCCCC, AACGTTCC, AACGCTCC, GGCGTTCC, GGCGCTCC, GGCGTCCC, and GGCGCCCC.

82. (New) The population of claim 81, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of
5'-TCATCTCGAACGTTCCACAGTCA-3' (SEQ ID NO:3),
5'-TGACTGTGAACGTTCCAGATGA-3' (SEQ ID NO:4),
5'-TGACTGTGAABGTTCCAGATGA-3' (SEQ ID NO:6) where B is 5-bromocytosine.

83. (New) The population of claim 78, wherein said immunostimulatory sequence comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

84. (New) The population of claim 83, wherein said immunostimulatory sequence is comprises a sequence selected from the group consisting of GACGCTCG, GACGTCCG, GACGCCCG, GACGTTCG, AGCGCTCG, AGCGTTCG, AGCGTCCG, AGCGCCCG, AACGTCCG, AACGCCCG, AACGTTCG, AACGCTCG, GGCGTTCG, GGCGCTCG, GGCGTCCG, and GGCGCCCG.

85. (New) The population of claim 84, wherein said immunostimulatory sequence comprises a sequence selected from the group consisting of
5'-TGACTGTGAACGTTCGAGATGA-3' (SEQ ID NO:1),
5'-TGACCGTGAACGTTCGAGATGA-3' (SEQ ID NO:2),
5'-TCCATAACGTTCGCCTAACGTTCGTC-3' (SEQ ID NO:5)
5'-TGACTGTGAABGTTCGAGATGA-3' (SEQ ID NO:7) where B is 5-bromocytosine, and
5'-TGACTGTGAABGTTBGAGATGA-3' (SEQ ID NO:8) where B is 5-bromocytosine.

86. (New) A composition comprising the population of claim 75 in a pharmaceutically acceptable excipient.

87. (New) The population according to claim 1, wherein the antigen is a viral antigen.

88. (New) The population according to claim 63, wherein the antigen is a viral antigen.

89. (New) The population according to claim 75, wherein the antigen is a viral antigen.

90. (New) The population according to claim 1, wherein the antigen is an allergen.

91. (New) The population according claim 90, wherein the allergen is Amb a 1.

92. (New) The population according to claim 90, wherein the allergen is selected from the group consisting of a pollen allergen, an insect allergen, a mammal allergen, a nut allergen, a crustacean allergen and a fungal allergen.

93. (New) The population according to claim 90, wherein the allergen is selected from the group consisting of a ragweed allergen, a grass allergen, a birch allergen, a cedar allergen, a juniper allergen, a dust mite allergen, a cockroach allergen, a cat allergen, a dog allergen, a peanut allergen, a wheat allergen and a latex allergen.

94. (New) The population according to claim 63, wherein the antigen is an allergen.

95. (New) The population according claim 94, wherein the allergen is Amb a 1.

96. (New) The population according to claim 94, wherein the allergen is selected from the group consisting of a pollen allergen, an insect allergen, a mammal allergen, a nut allergen, a crustacean allergen and a fungal allergen.

97. (New) The population according to claim 94, wherein the allergen is selected from the group consisting of a ragweed allergen, a grass allergen, a birch allergen, a cedar allergen, a juniper allergen, a dust mite allergen, a cockroach allergen, a cat allergen, a dog allergen, a peanut allergen, a wheat allergen and a latex allergen.

98. (New) The population according to claim 75, wherein the antigen is an allergen.

99. (New) The population according claim 98, wherein the allergen is Amb a 1.

100. (New) The population according to claim 98, wherein the allergen is selected from the group consisting of a pollen allergen, an insect allergen, a mammal allergen, a nut allergen, a crustacean allergen and a fungal allergen.

101. (New) The population according to claim 98, wherein the allergen is selected from the group consisting of a ragweed allergen, a grass allergen, a birch allergen, a cedar

allergen, a juniper allergen, a dust mite allergen, a cockroach allergen, a cat allergen, a dog allergen, a peanut allergen, a wheat allergen and a latex allergen.

102. (New) The population according to claim 2, wherein the allergen is selected from the group consisting of a pollen allergen, an insect allergen, a mammal allergen, a nut allergen, a crustacean allergen and a fungal allergen.

103. (New) The population according to claim 2, wherein the allergen is selected from the group consisting of a ragweed allergen, a grass allergen, a birch allergen, a cedar allergen, a juniper allergen, a dust mite allergen, a cockroach allergen, a cat allergen, a dog allergen, a peanut allergen, a wheat allergen and a latex allergen.

104. (New) The population according to claim 1, wherein the antigen is a polypeptide.

105. (New) The population according to claim 2, wherein the allergen is a polypeptide.

106. (New) The population according to claim 63, wherein the antigen is a polypeptide.

107. (New) The population according to claim 75, wherein the antigen is a polypeptide.